N61165.AR.005632
CNC CHARLESTON
5090.3a

UNDERGROUND STORAGE TANK ASSESSMENT (UST) REPORT FOR BUILDING NS14
CNC CHARLESTON SC
04/08/1999
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

4.14.99
L05.6.99

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090
Code 1849
8 April 99

Mr. Paul Bristol
South Carolina Department of Health
And Environmental Control
Groundwater Quality Section
Bureau of Water
2600 Bull Street
Columbia, SC 29201

01311
2

UST ASSESSMENT REPORT FOR CHARLESTON NAVAL COMPLEX, CHARLESTON, SC

Dear Mr. Bristol:

Enclosed is the Assessment Report for the closure of Aboveground Storage Tank NS 14 located at the Charleston Naval Complex, Charleston, SC. The tank was demolished in February 1997, but no samples were taken because this site was part of the IR Program. This site was later transferred to the Petroleum Program, closure assessment samples were taken and the results are in the attached report.

If you have any questions please contact me at (843) 820-7307.

Sincerely,

GABRIEL L. MAGWOOD
Remedial Project Manager

Encl:
(1) NS 14 Assessment Report

0131 RECEIVED 4.14.99 4.6.99

APR 12 1999

Water Monitoring, Assessment & Protection Division

Aboveground Storage Tank (AST) Assessment Report

Date Received
State Use Only

Submit Completed Form to:
SCDHEC
2600 Bull Street
Columbia, South Carolina 29201
Telephone (803) 734-5331

I. OWNERSHIP OF AST(S)

Agency/Owner: Southern Division, Naval Facilities Engineering Command, Caretaker Site Office

Mailing Address: P.O. Box 190010

City: N. Charleston State: SC Zip Code: 29419-9010

Area Code: 843 Telephone Number: 743-9985 Contact Person: Henry N. Shepard II, P. E.

II. SITE IDENTIFICATION AND LOCATION

Site I.D. #: Unregulated

Facility Name: Charleston Naval Base Complex, NS14

Street Address: Dyess Avenue

City: North Charleston, 29405-2413 County: Charleston

III. CLOSURE INFORMATION

Closure Started: 5 Feb 1997 Closure Completed: 22 Jan 1999

Number of ASTs Closed: 1

N/A — Consultant

SPORTENVDETCHASN — AST Removal Contractor

IV. CERTIFICATION (Read and Sign after completing entire submittal)

I certify that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate and complete.

Henry Shepard II, P. E.
Name (Type or Print)

Henry N. Shepard II 4/5/99
Signature

V. AST INFORMATION

AST NS14	Tank 2	Tank 3	Tank 4	Tank 5
A. Product..... Fuel oil				
B. Capacity..... 215,500 gallons				
C. Age..... 1956				
D. Construction Material..... steel				
E. Month/Year of Last Use..... 3/96				
F. Spill Prevention Equipment Y/N..... N				
G. Overfill Prevention Equipment Y/N.... N				
H. Method of Closure Removed/Filled.. R				
I. Visible Corrosion or Pitting Y/N..... Y				
J. Visible Holes Y/N..... N				

L. Method of disposal for any ASTs removed.

AST NS14 was cleaned with a steam cleaner and cut up for recycling as scrap metal on site. (See Attachment III.)

M. Method of disposal for any liquid petroleum, sludges, or waste waters removed from the ASTs.

The residual fuel oil, waste water, and sludge were recycled.

N. If any corrosion, pitting, or holes were observed, describe the location and extent for each AST.

AST NS14 was covered with streaks of pitting and rust throughout its exterior. No holes were found.

VI. PIPING INFORMATION

	AST NS14	Tank 2	Tank 3	Tank 4	Tank 5
A.	Steel				
B.	N/A				
C.	N/A				
D.	S				
E.	N/A				
F.	N				
G.	N				
H.	1956				

I. If any corrosion, pitting, or holes were observed, describe the location and extent for each line.

No corrosion, pitting, or holes were found in the lines.

VII. BRIEF SITE DESCRIPTION AND HISTORY

AST NS 14 provided fuel oil to various facilities on Naval Base Charleston. Two steel fuel oil lines exited the tank, a two inch and an eight inch line. The eight inch piping had two in-line cut-off valves. One valve was above ground adjacent to the tank. The other valve was inside a subsurface valve pit which connected the tank to the base fuel distribution system. The valve pit was approximately 50 feet from the tank and outside of the tank's earthen berm. The eight inch piping from the tank was cut just outside the valve pit and removed. An aqueous film-forming foam fire fighting system was connected to the eight inch pipe via a three inch steel line. This line was disconnected, blanked, and left in place. The two inch line supplied fuel to the adjacent fire fighting school, approximately 480' away. This line was cut off below grade, blanked, and left in place.

VIII. SITE CONDITIONS

		Yes	No	Unk
A.	Were any petroleum-stained or contaminated soils found near the AST?		X	
B.	Were any petroleum odors detected?	X		
	If yes, indicate location on site map and describe the odor (strong, mild, etc.) **[MILD within berm]**			

IX. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 10120

B.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected By	OVA#
99SPORT 0093-1	Trip Blank	Water					
99SPORT 0093-2	Pipe & Tank	Soil	Sand	4'	20 Jan 99 1340	W. Nesbit	49.3ppm
99SPORT 0093-3	Middle of pipe run	Soil	Sand	4'	20 Jan 99 1400	W. Nesbit	143.3ppm
99SPORT 0093-4	Pipe run near valve pit	Soil	Sand	4'	20 Jan 99 1415	W. Nesbit	47.0ppm
99SPORT 0093-5	Tank	Soil	Sand	2'	20 Jan 99 1437	W. Nesbit	4.9ppm
99SPORT 0093-6	Tank	Soil	Sand	2'	20 Jan 99 1450	W. Nesbit	0.4ppm
99SPORT 0093-7	Tank	Soil	Sand	2'	20 Jan 99 1512	W. Nesbit	0.9ppm

* = Depth Below the Surrounding Land Surface

X. SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store (preserve) the samples.

After the removal of AST NS14 and its associated piping, soil samples were taken. Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SC DHEC UST Assessment Guidelines.

Sample jars were prepared by the testing laboratory. The grab method was utilized to fill the sample containers leaving as little head space as possible and immediately capped. Soil samples were extracted at strategic locations around the perimeter of the AST and from beneath the piping. Samples for volatiles were taken using the Encore sampler and T-handle.

The samples were marked, logged, and immediately placed in sample coolers packed with ice to maintain an approximate temperature of 4° C. Tools were thoroughly cleaned and decontaminated with organic-free soap and water after each sample.

The samples remained in the custody of SPORTENVDETCHASN until they were transferred to General Engineering Laboratories for analysis as documented in the attached Chain-of-Custody Record.

XI. RECEPTORS

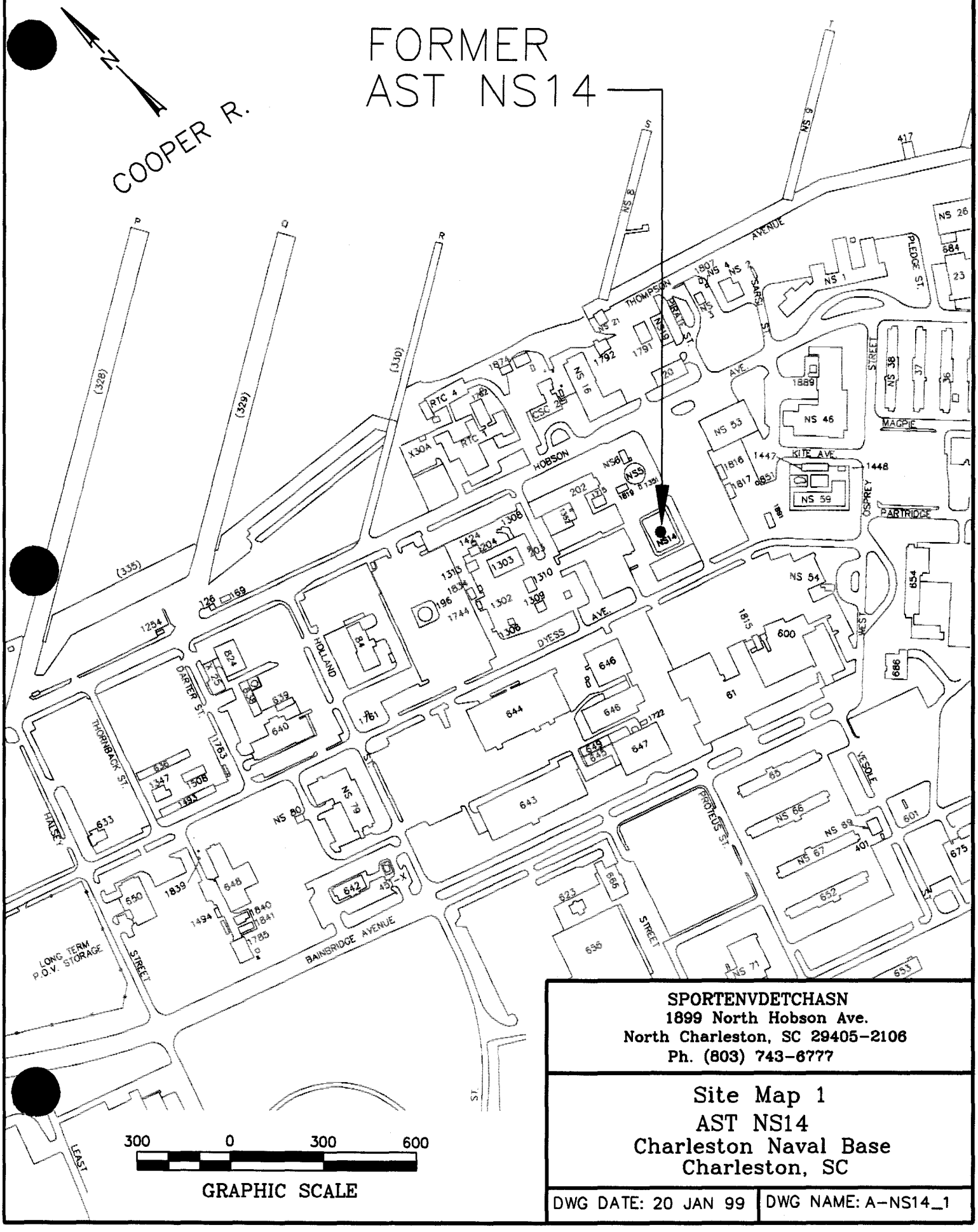
		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the AST system? **[Cooper R. ~715']** If yes, indicate type of receptor, distance, and direction on site map.	X	
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the AST system? If yes, indicate type of well, distance, and direction on site map.		X
C.	Are there any underground structures (e.g., basements) located within 100 feet of the AST system? If yes, indicate the type of structure, distance, and direction on site map.		X
D.	Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the AST system that could potentially come in contact with the contamination? If yes, indicate the type of utility, distance, and direction on the site map.		X

Attachment I

SITE MAP

You must supply a scaled site map. It should include all buildings, road names, utilities, tank and pump island locations, sample locations, extent of excavation, and any other pertinent information.

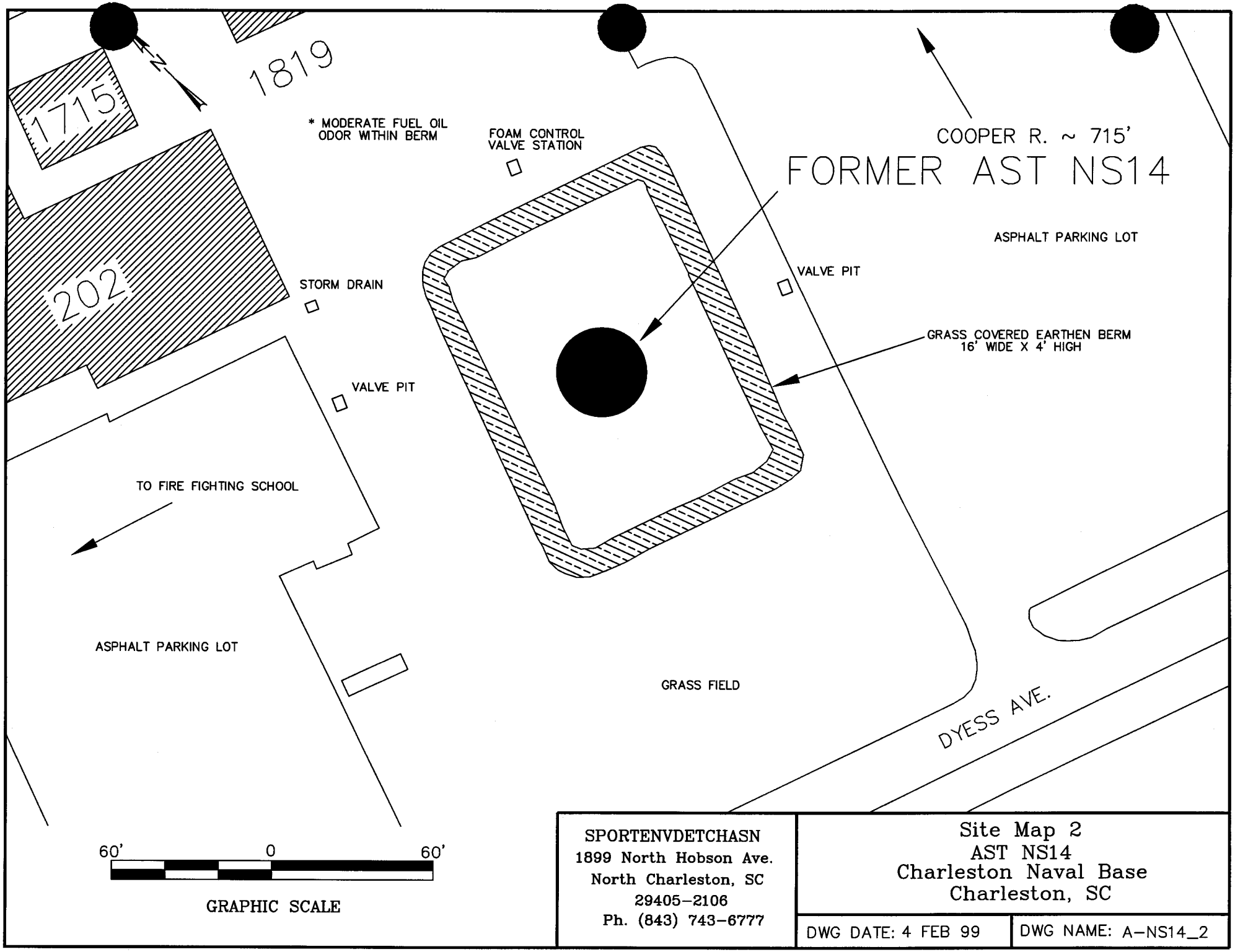
Site Maps 1, 2 and 3
Photographs 1 through 6



SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Site Map 1
AST NS14
Charleston Naval Base
Charleston, SC

DWG DATE: 20 JAN 99	DWG NAME: A-NS14_1

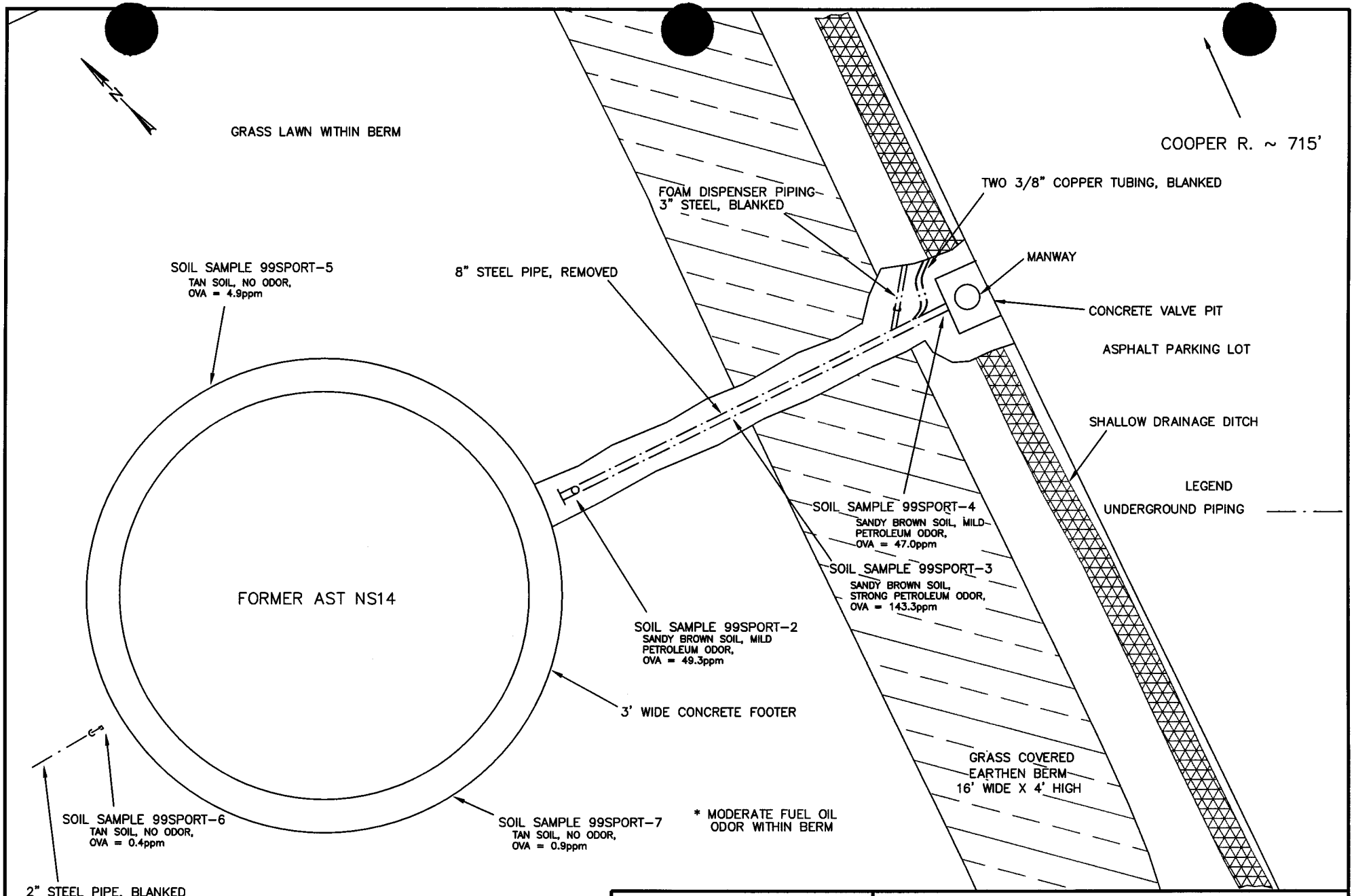


SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC
29405-2106
Ph. (843) 743-6777

Site Map 2
AST NS14
Charleston Naval Base
Charleston, SC

DWG DATE: 4 FEB 99

DWG NAME: A-NS14_2



SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC
29405–2106
Ph. (843) 743–6777

Site Map 3
AST NS14
Charleston Naval Base
Charleston, SC

DWG DATE: 5 FEB 99

DWG NAME: A–NS14_3

AST NS14

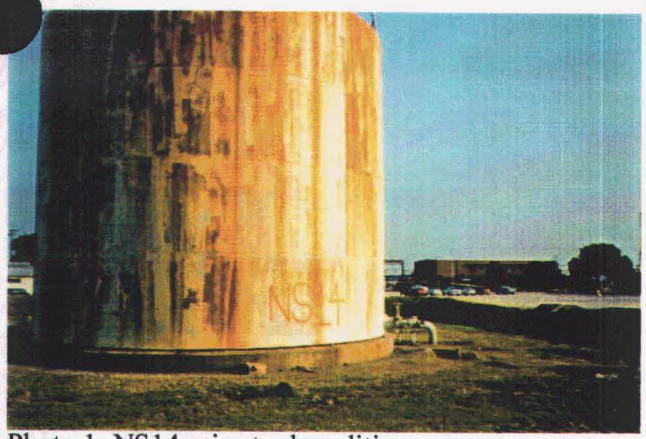


Photo 1: NS14 prior to demolition.

Photo 2: NS14 prior to demolition.


Photo 3: NS14 site after demolition.

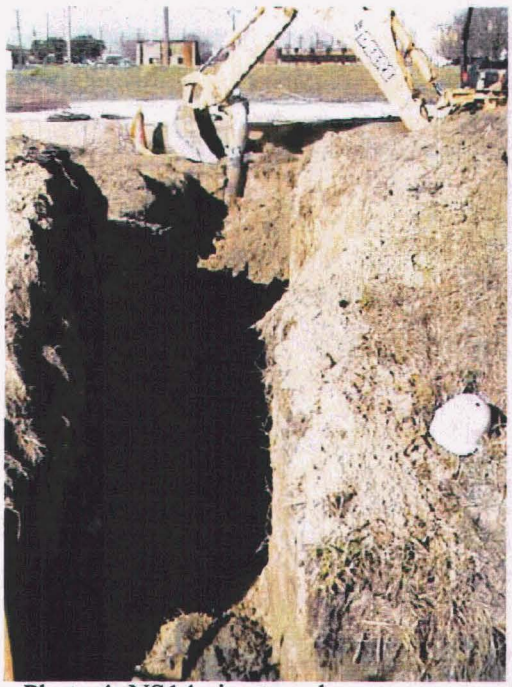


Photo 4: NS14 pipe trench.


oto 5: NS14 piping.


Photo 6: NS14 berm and shallow drainage ditch.

Attachment II

ANALYTICAL RESULTS

You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.

Certified Analytical Results
Chain-of-Custody

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID	: 99SPORT0093-1
Lab ID	: 9901671-01
Matrix	: GroundH2O
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	0.300	1.00	ug/l	1.0	TCL	01/27/99	1748	140859	1
Ethylbenzene	U	ND	0.300	1.00	ug/l	1.0					
Toluene	U	ND	0.500	1.00	ug/l	1.0					
Xylenes (TOTAL)	U	ND	1.10	2.00	ug/l	1.0					
Naphthalene	U	ND	0.600	1.00	ug/l	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	BTEX-8260	110.	(60.2 - 139.)
Dibromofluoromethane	BTEX-8260	95.1	(70.6 - 152.)
Toluene-d8	BTEX-8260	96.2	(68.4 - 135.)
Bromofluorobenzene	NAP-8260	110.	(60.2 - 139.)
Dibromofluoromethane	NAP-8260	95.1	(70.6 - 152.)
Toluene-d8	NAP-8260	96.2	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260

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Printed on recycled paper.

9901671-01

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87296	E87472/N7458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-1

M = Method	Method-Description

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson
Reviewed By

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID	: 99SPORT0093-2
Lab ID	: 9901671-02
Matrix	: Soil
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	0.453	1.00	ug/kg	1.0	JEB	01/25/99	1119	140586	1
Ethylbenzene		6.16	0.272	1.00	ug/kg	1.0					
Toluene		6.52	0.815	1.00	ug/kg	1.0					
Xylenes (TOTAL)		3.91	0.634	2.00	ug/kg	1.0					
Naphthalene		632	53.0	88.3	ug/kg	98.					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 15 items											
Acenaphthene	J	1000	630	1310	ug/kg	4.0	JPA	01/28/99	2048	140507	2
Acenaphthylene	U	ND	577	1310	ug/kg	4.0					
Anthracene		2330	341	1310	ug/kg	4.0					
Benzo(a)anthracene	U	ND	262	1310	ug/kg	4.0					
Benzo(a)pyrene	U	ND	289	1310	ug/kg	4.0					
Benzo(b)fluoranthene	U	ND	564	1310	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	315	1310	ug/kg	4.0					
Benzo(k)fluoranthene	U	ND	525	1310	ug/kg	4.0					
Chrysene	U	ND	210	1310	ug/kg	4.0					
Dibenzo(a,h)anthracene	U	ND	328	1310	ug/kg	4.0					
Fluoranthene		1440	262	1310	ug/kg	4.0					
Fluorene	J	992	446	1310	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	U	ND	315	1310	ug/kg	4.0					
Phenanthrene	U	ND	236	1310	ug/kg	4.0					
Pyrene		1410	289	1310	ug/kg	4.0					

The following prep procedures were performed:

Volatiles 8260 High Level	JEB	01/22/99	1018	140586 3
GC/MS Base/Neutral Compounds	HDB	01/25/99	1630	140507

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9901671-02

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-NO NAP	73.4	(44.7 - 110.)
Nitrobenzene-d5	M610-NO NAP	68.2	(42.4 - 107.)
p-Terphenyl-d14	M610-NO NAP	75.7	(45.5 - 104.)
Bromofluorobenzene	BTEX-8260	161.*	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	105.	(63.4 - 136.)
Toluene-d8	BTEX-8260	131.	(72.1 - 137.)
Bromofluorobenzene	NAP-8260	161.*	(53.5 - 154.)
Dibromofluoromethane	NAP-8260	105.	(63.4 - 136.)
Toluene-d8	NAP-8260	131.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-2

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

Reviewed By

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9901671-02

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID	: 99SPORT0093-3
Lab ID	: 9901671-03
Matrix	: Soil
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	44.0	88.0	ug/kg	50.	JEB	01/26/99	2007	140586	1
Ethylbenzene	U	ND	26.4	88.0	ug/kg	50.					
Toluene	U	ND	79.2	88.0	ug/kg	50.					
Xylenes (TOTAL)	J	67.8	61.6	176	ug/kg	50.					
Naphthalene		217	52.8	88.0	ug/kg	50.					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 15 items											
Acenaphthene	U	ND	3150	6560	ug/kg	20.	JPA	01/29/99	1111	140507	2
Acenaphthylene	U	ND	2890	6560	ug/kg	20.					
Anthracene	U	ND	1710	6560	ug/kg	20.					
Benzo(a)anthracene	U	ND	1310	6560	ug/kg	20.					
Benzo(a)pyrene	U	ND	1440	6560	ug/kg	20.					
Benzo(b)fluoranthene	U	ND	2820	6560	ug/kg	20.					
Benzo(ghi)perylene	U	ND	1570	6560	ug/kg	20.					
Benzo(k)fluoranthene	U	ND	2620	6560	ug/kg	20.					
Chrysene	U	ND	1050	6560	ug/kg	20.					
Dibenzo(a,h)anthracene	U	ND	1640	6560	ug/kg	20.					
Fluoranthene	U	ND	1310	6560	ug/kg	20.					
Fluorene	U	ND	2230	6560	ug/kg	20.					
Indeno(1,2,3-c,d)pyrene	U	ND	1570	6560	ug/kg	20.					
Phenanthrene	U	ND	1180	6560	ug/kg	20.					
Pyrene	U	ND	1440	6560	ug/kg	20.					

The following prep procedures were performed:

Volatiles 8260 High Level	JEB	01/22/99	1022	140586 3
GC/MS Base/Neutral Compounds	HDB	01/25/99	1630	140507 *

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9901671-03

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-NO NAP	0.00*	(44.7 - 110.)
Nitrobenzene-d5	M610-NO NAP	0.00*	(42.4 - 107.)
p-Terphenyl-d14	M610-NO NAP	0.00*	(45.5 - 104.)
Bromofluorobenzene	BTEX-8260	101.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	91.3	(63.4 - 136.)
Toluene-d8	BTEX-8260	116.	(72.1 - 137.)
Bromofluorobenzene	NAP-8260	101.	(53.5 - 154.)
Dibromofluoromethane	NAP-8260	91.3	(63.4 - 136.)
Toluene-d8	NAP-8260	116.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:
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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client:	Supervisor of Ship Building & Conversion SUPSHIP-Portsmouth Detachment-Env. 1899 North Hobson Ave. North Charleston, South Carolina 29405-2106
Contact:	Mr. Bill Hiers
Project Description:	SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-3

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

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9901671-03

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID	: 99SPORT0093-4
Lab ID	: 9901671-04
Matrix	: Soil
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	0.442	1.00	ug/kg	1.0	JEB	01/26/99	1653	140586	1
Ethylbenzene	U	ND	0.265	1.00	ug/kg	1.0					
Toluene	U	ND	0.795	1.00	ug/kg	1.0					
Xylenes (TOTAL)	U	ND	0.618	2.00	ug/kg	1.0					
Naphthalene	U	ND	0.530	1.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 15 items											
Acenaphthene	U	ND	157	330	ug/kg	1.0	JPA	01/28/99	2149	140507	2
Acenaphthylene	U	ND	144	330	ug/kg	1.0					
Anthracene	U	ND	85.3	330	ug/kg	1.0					
Benzo(a)anthracene	U	ND	65.6	330	ug/kg	1.0					
Benzo(a)pyrene	U	ND	72.2	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	141	330	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	78.7	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	131	330	ug/kg	1.0					
Chrysene	U	ND	52.5	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	82.0	330	ug/kg	1.0					
Fluoranthene	U	ND	65.6	330	ug/kg	1.0					
Fluorene	U	ND	112	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	78.7	330	ug/kg	1.0					
Phenanthrene	U	ND	59.0	330	ug/kg	1.0					
Pyrene	U	ND	72.2	330	ug/kg	1.0					

The following prep procedures were performed:

Volatiles 8260 High Level	JEB	01/22/99 1031	140586 3
GC/MS Base/Neutral Compounds	HDB	01/25/99 1630	140507

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9901671-04

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-NO NAP	70.6	(44.7 - 110.)
Nitrobenzene-d5	M610-NO NAP	78.2	(42.4 - 107.)
p-Terphenyl-d14	M610-NO NAP	77.7	(45.5 - 104.)
Bromofluorobenzene	BTEX-8260	124.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	100.	(63.4 - 136.)
Toluene-d8	BTEX-8260	122.	(72.1 - 137.)
Bromofluorobenzene	NAP-8260	124.	(53.5 - 154.)
Dibromofluoromethane	NAP-8260	100.	(63.4 - 136.)
Toluene-d8	NAP-8260	122.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87412/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: February 02, 1999

Sample ID : 99SPORT0093-4

M = Method **Method-Description**

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: February 02, 1999

Sample ID	: 99SPORT0093-5
Lab ID	: 9901671-05
Matrix	: Soil
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	0.462	1.00	ug/kg	1.0	JEB	01/25/99	1241	140586	1
Ethylbenzene	U	ND	0.277	1.00	ug/kg	1.0					
Toluene	U	ND	0.831	1.00	ug/kg	1.0					
Xylenes (TOTAL)	J	0.757	0.646	2.00	ug/kg	1.0					
Naphthalene	J	0.701	0.554	1.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 15 items											
Acenaphthene	U	ND	157	330	ug/kg	1.0	JPA	01/28/99	2219	140507	2
Acenaphthylene	U	ND	144	330	ug/kg	1.0					
Anthracene	U	ND	85.3	330	ug/kg	1.0					
Benzo(a)anthracene	U	ND	65.6	330	ug/kg	1.0					
Benzo(a)pyrene	U	ND	72.2	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	141	330	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	78.7	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	131	330	ug/kg	1.0					
Chrysene	U	ND	52.5	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	82.0	330	ug/kg	1.0					
Fluoranthene	U	ND	65.6	330	ug/kg	1.0					
Fluorene	U	ND	112	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	78.7	330	ug/kg	1.0					
Phenanthrene	U	ND	59.0	330	ug/kg	1.0					
Pyrene	U	ND	72.2	330	ug/kg	1.0					

The following prep procedures were performed:

Volatiles 8260 High Level — JEB 01/22/99 1034 140586 3

GC/MS Base/Neutral Compounds — HDB 01/25/99 1630 140507

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Client: Supervisor of Ship Building & Conversion
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1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-5

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-NO NAP	70.1	(44.7 - 110.)
Nitrobenzene-d5	M610-NO NAP	77.9	(42.4 - 107.)
p-Terphenyl-d14	M610-NO NAP	76.4	(45.5 - 104.)
Bromofluorobenzene	BTEX-8260	123.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	106.	(63.4 - 136.)
Toluene-d8	BTEX-8260	124.	(72.1 - 137.)
Bromofluorobenzene	NAP-8260	123.	(53.5 - 154.)
Dibromofluoromethane	NAP-8260	106.	(63.4 - 136.)
Toluene-d8	NAP-8260	124.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: February 02, 1999

Sample ID : 99SPORT0093-5

M = Method **Method-Description**

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9901671-05

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: February 02, 1999

Sample ID	: 99SPORT0093-6
Lab ID	: 9901671-06
Matrix	: Soil
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	0.456	1.00	ug/kg	1.0	JEB	01/26/99	1748	140586	1
Ethylbenzene	U	ND	0.273	1.00	ug/kg	1.0					
Toluene	U	ND	0.820	1.00	ug/kg	1.0					
Xylenes (TOTAL)	U	ND	0.638	2.00	ug/kg	1.0					
Naphthalene	J	0.865	0.547	1.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 15 items											
Acenaphthene	U	ND	157	330	ug/kg	1.0	JPA	01/28/99	2249	140507	2
Acenaphthylene	U	ND	144	330	ug/kg	1.0					
Anthracene	U	ND	85.3	330	ug/kg	1.0					
Benzo(a)anthracene	U	ND	65.6	330	ug/kg	1.0					
Benzo(a)pyrene	U	ND	72.2	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	141	330	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	78.7	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	131	330	ug/kg	1.0					
Chrysene	U	ND	52.5	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	82.0	330	ug/kg	1.0					
Fluoranthene	U	ND	65.6	330	ug/kg	1.0					
Fluorene	U	ND	112	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	78.7	330	ug/kg	1.0					
Phenanthrene	U	ND	59.0	330	ug/kg	1.0					
Pyrene	U	ND	72.2	330	ug/kg	1.0					

The following prep procedures were performed:

Volatiles 8260 High Level	JEB	01/22/99	1052	140586 3
GC/MS Base/Neutral Compounds	HDB	01/25/99	1630	140507 *

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-NO NAP	68.2	(44.7 - 110.)
Nitrobenzene-d5	M610-NO NAP	70.7	(42.4 - 107.)
p-Terphenyl-d14	M610-NO NAP	81.6	(45.5 - 104.)
Bromofluorobenzene	BTEX-8260	130.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	100.	(63.4 - 136.)
Toluene-d8	BTEX-8260	128.	(72.1 - 137.)
Bromofluorobenzene	NAP-8260	130.	(53.5 - 154.)
Dibromofluoromethane	NAP-8260	100.	(63.4 - 136.)
Toluene-d8	NAP-8260	128.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL)
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	UPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-6

M = Method **Method-Description**

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: February 02, 1999

Sample ID	: 99SPORT0093-7
Lab ID	: 9901671-07
Matrix	: Soil
Date Collected	: 01/22/99
Date Received	: 01/22/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	ND	0.451	1.00	ug/kg	1.0	JEB	01/26/99	1816	140586	1
Ethylbenzene	U	ND	0.270	1.00	ug/kg	1.0					
Toluene	U	ND	0.811	1.00	ug/kg	1.0					
Xylenes (TOTAL)	U	ND	0.631	2.00	ug/kg	1.0					
Naphthalene	U	ND	0.541	1.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 15 items											
Acenaphthene	U	ND	157	330	ug/kg	1.0	JPA	01/28/99	2320	140507	2
Acenaphthylene	U	ND	144	330	ug/kg	1.0					
Anthracene	U	ND	85.3	330	ug/kg	1.0					
Benzo(a)anthracene	U	ND	65.6	330	ug/kg	1.0					
Benzo(a)pyrene	U	ND	72.2	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	141	330	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	78.7	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	131	330	ug/kg	1.0					
Chrysene	U	ND	52.5	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	82.0	330	ug/kg	1.0					
Fluoranthene	U	ND	65.6	330	ug/kg	1.0					
Fluorene	U	ND	112	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	78.7	330	ug/kg	1.0					
Phenanthrene	U	ND	59.0	330	ug/kg	1.0					
Pyrene	U	ND	72.2	330	ug/kg	1.0					

The following prep procedures were performed:

Volatiles 8260 High Level — JEB 01/22/99 1057 140586 3
GC/MS Base/Neutral Compounds — HDB 01/25/99 1630 140507

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9901671-07

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: February 02, 1999

Sample ID : 99SPORT0093-7

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-NO NAP	73.6	(44.7 - 110.)
Nitrobenzene-d5	M610-NO NAP	62.7	(42.4 - 107.)
p-Terphenyl-d14	M610-NO NAP	75.1	(45.5 - 104.)
Bromofluorobenzene	BTEX-8260	108.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	88.3	(63.4 - 136.)
Toluene-d8	BTEX-8260	110.	(72.1 - 137.)
Bromofluorobenzene	NAP-8260	108.	(53.5 - 154.)
Dibromofluoromethane	NAP-8260	88.3	(63.4 - 136.)
Toluene-d8	NAP-8260	110.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 5035
M 4	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: February 02, 1999

Sample ID : 99SPORT0093-7

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

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9901671-07

NJC 00197

Page 1 of 1

CHAIN OF CUSTODY RECORD

9901671

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

CCL# 37845

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	BTEX/NAP	PAH	Remarks
-01	99SPORTØØ93-1	1-20-99	1300				X	3																✓		Water TRIP BLANK .2
-02	99SPORTØØ93-2	1-20-99	1340		X		X	4																✓	✓	NS-14-1 PIPE + TANK .1
-03	99SPORTØØ93-3	1-20-99	1400		X		X	4																✓	✓	NS-14-2 PIPE .1
-04	99SPORTØØ93-4	1-20-99	1415		X		X	4																✓	✓	NS-14-3 PIPE .1
-05	99SPORTØØ93-5	1-20-99	1437		X		X	4																✓	✓	NS-14-4 TANK .1
-06	99SPORTØØ93-6	1-20-99	1450		X		X	4																✓	✓	NS-14-5 TANK + PIPE .1
-07	99SPORTØØ93-7	1-20-99	1512		X		X	4																✓	✓	NS-14-6 TANK .1

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
William Z Hunter	1-21-99	1605	W.R. Heers, Jr.	W.R. Heers, Jr.	1/21/99	1547	Stephanie Bartelton
Stephanie Bartelton	1-21-99	1610	Received by lab by: Brandy	Date: 1/21/99	Time: 1610	Remarks:	

White = sample collector Yellow = file Pink = with report

Attachment III

Certificate of Disposal (tank)

AST Certificate of Disposal

CONTRACTOR

Supervisor of Shipbuilding, Conversion and Repair, USN
Portsmouth, VA
Environmental Detachment Charleston
1899 North Hobson Avenue
North Charleston 29405-2106

Telephone (843) 743-6482

TANK ID & LOCATION

AST NS14; Dyess Avenue, Naval Base Charleston, North Charleston, SC

DISPOSAL LOCATION

Bldg. 1601 Tank Cleaning
& Disposal Area
Charleston Naval Complex

TYPE OF TANK	SIZE (GAL)
Fuel oil	215,500

CLEANING/DISPOSAL METHOD

The tank was opened, cleaned with a steam cleaner, and cut into sections on site. It was then disposed of as recyclable scrap metal.

DISPOSAL CERTIFICATION

I certify that the above tank has been properly cleaned and disposed of as recyclable scrap metal.

C. C. Wannamaker 12/29/97

C. C. Wannamaker (Date)